

Heterotrophic: Eat other organisms

Bacterial can do all six combinations

Eukaryotes can only do two:

1. Light-based autotrophy: Photosynthesis
2. Organic-molecule-based heterotrophy: Respiration

Heterotrophic bacteria feed by absorbing nutrients (sugars & proteins) across their cell membranes

The three domains of life

Prokaryotes

Lack membrane-bound nucleus and organelles

Generally small and asexual

Distinguished by variation in cell membrane proteins

Diversity of morphology and metabolisms

1. Domain archae (archaebacteria)
2. Doman Eubacteria (bacteria)

Eukaryotes

Membrane-bound nucleus and organelles

Generally larger and sexual

3. Domain Eukarya

The prokaryotic bacteria are not a monophyletic clade. (it is paraphyletic)

Introduction to Bacteria

Microbiology is the study of microbes (microscopic organisms)

Most bacteria have not been named nor described

Only 13,000 strains (species) of eubacterials and archaens have been described

At least 1 billion strains likely exist